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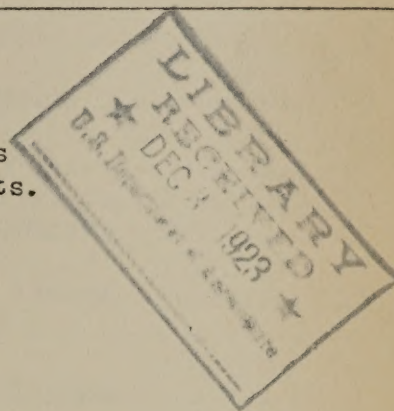
COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

U. S. Department of Agriculture
and State Agricultural Colleges
Cooperating.

Extension Service, Office of
Cooperative Extension Work,
Washington, D. C.

POULTRY MANAGEMENT

Excerpts from 1922 Annual Reports
of State and County Extension Agents.



This circular is one of a series issued by the Office of Cooperative Extension Work as a part of its informational service to State and county extension workers. It was compiled at the request of L. E. Card, Professor of Poultry Husbandry, University of Illinois, Urbana. The material contained herein is not released for printed publication.

Division of Extension, Office of
Cooperative Extension Work,
Washington, D. C.

U.S. Department of Agriculture
and State Agricultural College
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FOR THE INFORMATION

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Florida

Besides marketing, the associations have been investigating the leaks that occur in the production side of poultry raising. A set of poultry slides was shown in 14 communities. These were very interesting, giving a good general view of poultry raising and suggesting the lines along which improvement is needed. Special programs have since been given to discussion of hatching and care of baby chicks, feeding for eggs, pests, housing, and stock improvement. In order to promote interest in better equipment and stock, 11 tours, in which 254 people participated, have been conducted to successful plants. Eighty-seven new poultry houses have been built as a result of these tours and several hundred dollars' worth of better breeding stock purchased. Nineteen culling demonstrations were given by the agent in different parts of the county, eliminating 414 slackers. Forty members reported that they had culled their own flocks. Further work will be done on all of these lines the coming year. Excellent study programs that go deep into the study of scientific principles are being arranged by the program committees. A poultry school in January and a poultry show in February are being arranged. The establishment of association poultry houses to handle all kinds of poultry products and feeds is included in the program for next year. - Orpha Cole, Home Demonstration Agent, DeLand, Volusia County.

*No attempt is made to cite all references to poultry management in this circular. Only selected extracts showing typical methods employed and results secured in some States are included. Owing to differences in terminology used in the various States and to other local conditions, the information contained in this circular should be reviewed by the State subject-matter specialist before incorporating any part of it in the extension plans for the State.

Idaho

To further the poultry project, culling demonstrations to be given by county agent and specialist were planned in 11 communities. Three communities decided to purchase baby chicks cooperatively, and the community leader on poultry was to solicit orders and take charge of the work. Four communities decided to build model poultry houses and requested that plans be furnished. During the winter considerable interest was aroused regarding the poultry business; it was decided to make an effort to have every farm raise 200 hens. As a result, 17,000 baby chicks were shipped in and distributed to practically every community. Fifty bulletins on housing and feeding were distributed; six new poultry houses were built according to plans; and six illustrated talks were given on poultry management. Two culling demonstrations were given, at which 500 hens were culled and about 20 per cent discarded. - M. A. Powell, County Agent, Preston, Franklin County.

Indiana

Poultry demonstration farms. - The original problem which prompted the adoption of this project was to prove poultry a business phase of farming. Demonstration farms keep simple but complete accounting records of the poultry flock. The subpurposes of these farms have been:

- (1) To prove that poultry keeping can be made to pay on Indiana farms.
- (2) To give it the same standing in the mind of the farmer that other work of the farm has.
- (3) To collect data on the factors affecting profits.
- (4) To make these farms breeding centers and let them serve as demonstrations of correct management for their communities.

There is a great interest in poultry keeping in Indiana. One of the limiting factors for those who are attempting to make poultry keeping a business phase of agriculture is the lack of breeding stock of good quality. In the various communities the farms which are developing into breeding centers have a tendency to overcome this difficulty. Many farms are still underestimating the possible increase in income from their poultry flocks. We hope to overcome this by giving greater publicity to the results secured on demonstration farms.

More attention is being given to the selection of farms where the farmer or his wife is capable of becoming a local leader in poultry projects and to securing the type of people who have good standing in their communities. The ultimate goal for this special project is to have established one good demonstration farm of needed varieties in each community in every county in Indiana. Meetings are held on these farms once or twice a year to discuss poultry problems in that community and to show methods and results. Some of these meetings are held in connection with poultry tours; excellent results have also been secured at all-day meetings. County agents assist in selecting these farms; in giving local publicity to the work done; in organizing and advertising meetings; and in forwarding blanks to the demonstrators and returning records to this office. The following table is made up from records beginning November 1, 1921, and ending October 31, 1922, and are representative of the 36 farms keeping these records:

Farm number	Average number of hens	Eggs per hen per year	Percentage of chicks reared	Labor income	Labor income per hen
1	235	172	76	\$745.45	\$3.40
2	359	160	80	1102.97	3.07
3	319	140	83	736.21	2.31
4	167	97	40	26.76	.16

Farms 1 to 3 prove that Indiana farms are making good profits, and that good egg production and ability to rear chickens are two of the controlling factors. The records on one of these demonstration farms for 1915 compared with 1922 are given below:

Item	1915	1922
Average price of eggs per dozen	\$0.19	\$0.26
Average number of hens	139	319
Average number of eggs per hen	115	140
Labor income per hen	\$1.12	\$2.31
Total labor income	\$156.00	\$736.00

As a demonstration to the community, this farm has been a success. At the time this work was started there were few people in the community that were doing good poultry work. Today within a mile of this farm there are seven farms with poultry houses of the same type and having flocks equal or greater in number.

Egg production is the best criterion by which to judge the profitability of poultry keeping. Few farmers have any idea as to how many eggs their hens lay in a year, and little interest is taken in the farm flock until records of some kind are kept. It is generally recognized that poor feeding is the greatest single limiting factor affecting profits. This has been proved by both experimental work and farm records. In 1920-21, 1,186 farmers kept this record; last year 1,662 records were started and 1,007 finished the year. With very rare exceptions the cooperators show an increase in egg production year by year. Pulaski County increased egg production over 100 dozen eggs per farm the second year. Only 4 farms out of 23 reporting in Kosciusko County averaged less than 100 eggs per hen per year. - P. G. Riley, Extension Poultryman, Purdue University, La Fayette.

Iowa

The improvement of poultry was adopted by this county as a county-wide project, the aim of which was to arouse an interest in better feeding, better housing, and better management of poultry by means of record flocks. There was to be one of these record flocks in every township, and the owner was to be the township project chairman. Nineteen of these flock keepers were secured, but only 14 have reported quite regularly. These record flocks were chosen because they showed good management in general and therefore could be designated as community demonstrations. Practically all these townships have regular monthly meetings at which there are short discussions on poultry

problems, and this has been the means of arousing considerable interest in poultry. From reports which have been received, 144 definite changes have been made in feeding, housing, equipment and management, and it is apparent from these reports that the county is badly in need of a poultry association. Requests have come in constantly for stock of different kinds; but without the necessary information, it has been practically impossible to be of much help to those seeking aid. It is hoped that eventually the record flock owners can be made the basis of a poultry association. Ninety-five families report that they have adopted suggestions which have been brought out in our poultry schools and discussions. Two training classes for project leaders have been held with an attendance of 35. These classes have been an effective method of disseminating poultry information through the cooperators who attended, since they are leaders in poultry management in their respective communities. - Signe Freestrom, Home Demonstration Agent, Fort Dodge, Webster County.

Maine

Economic production demonstrations were among the first definite projects undertaken in poultry extension work; during the earlier extension work in Maine they were among the principal projects carried. Having been conducted at one or more farms in a community, these demonstrations were especially helpful in establishing extension work; but as individual supervision was required, a large amount of time was necessary to their success. During the war period the large amount of work carried by the agents made it necessary to slight the economic production demonstrations, and they were dropped in several counties. This project was discontinued November 1, 1921, for two reasons: First, in the development of extension work and organization of farm bureaus time would not permit the conducting of a large number of demonstrations which demanded individual attention; second, for the reason that these demonstrations have been carried on for several years. In place of them and for the purpose of securing data, a poultry accounts project in cooperation with the farm management demonstrator was started. Economic production demonstrations have been a successful phase of extension work and have been the means of distributing information on better methods of poultry raising. Following is the method used in developing such demonstrations:

1. Purpose: To teach better methods of housing, feeding, and management through actual demonstration on a farm in a community.
2. Procedure:
 - (1) The demonstrator is chosen through assistance of community committeeman or project leader.
 - (2) The demonstrator is to conduct one demonstration in each town or community where poultry keeping is of sufficient importance.
 - (3) The demonstrator agrees to:
 - a. Use standardbred birds.
 - b. House in open front houses.
 - c. Feed Orono method formulas.
 - d. Hatch and rear chickens as suggested in Bulletin 123.
 - e. House pullets at proper time and manage all birds as recommended by extension service.

- (4) The demonstrator is to keep an account book of all expenses and receipts pertaining to the flock and send a monthly balance sheet to the farm bureau office. The balance sheet should show the number of birds on hand at beginning of each month.
 - (5) The county agent will assist the demonstrator in starting and will visit him as often as he deems it necessary.
 - (6) The extension poultryman will visit each demonstrator, accompanied by the county agent, as often as is necessary.
 - (7) When sufficient results have been secured, the demonstrator is to hold a field meeting at a farm, inviting the neighbors to attend. The results of the demonstration will then be shown and explained.
 - (8) Instructions, suggestions, and results will be sent to each demonstrator from time to time.
 - (9) The demonstration is to be continued until results have been secured and a field meeting held.
 - (10) After the demonstration ceases, the cooperator will be asked to continue his record book as a poultry account.
 - (11) Any demonstrator may be dropped when, in the opinion of the county agent, instructions are not being followed.
3. Results: Shown by the success of the demonstration and by the development of breeding centers.

Total number of demonstrations at beginning of year.....	17
Number dropped out.....	3
Number of demonstrations with incomplete data.....	1
Number of new demonstrators.....	3
Number of demonstrators at end of year.....	16
Total number of demonstrators who completed year.....	13

	Average for 13 : demonstrations :	Average per hen.
Number of:	:	:
Demonstrations.....	13	-
Hens	220	-
Dozen eggs produced.....	2,209	-
Eggs per hen	-	120
Expenses:	:	:
Feed.....	\$764.49	\$3.48
Labor	278.10	1.26
Equipment	105.17	.48
Miscellaneous.....	97.51	.44
Interest.....	75.09	.34
Total expenses	1,320.36	6.00
Inventory at beginning of year.....	1,293.47	5.83
Total debits	2,613.83	11.83
Receipts:	:	:
Eggs.....	1,071.93	4.88
Poultry	589.67	2.68
Breeding stock	182.53	.83

	Average for 13 demonstra- tions	Average per hen
Hatching eggs	67.50	.31
Miscellaneous	15.35	.07
Chicks.....	20.19	.09
Total receipts	1,947.17	8.86
Inventory at end of year	1,489.21	6.77
Total credits.....	3,436.38	15.63
Total debits.....	2,613.83	11.88
Net gain.....	\$822.55	\$ 3.75
Labor income.....	\$1,100.65	\$ 5.01

The inventory includes the value of stock, houses, equipment, and all accessories on hand at the beginning and at the end of the year. The increased value of the inventory at the end of the year is due to the fact that a larger number of pullets and hens were on hand. - O. M. Wilbur, Extension Poultryman, College of Agriculture, University of Maine, Orono.

The culling demonstration project was put into the community program at the winter planning meeting. A place of demonstration was decided upon and a demonstration meeting advertised by the local project leader. Assistance was given by the county agent who furnished the local leader with publicity posters and reports for demonstration received from the State extension poultryman. Six demonstrations were conducted by the State extension poultryman and 10 by the county agent. The local project leaders assisted at each demonstration and the county project leader at 2. The following statements can be proved:

- (1) An average of 30 per cent of the birds of all flocks in the county can be eliminated for at least two months earlier than they would be if culling were not practiced.
- (2) Twenty thousand culls would be removed each year if all farmers culled.
- (3) At a cost of 15 cents per bird per month a saving of \$6,000 would be made in this manner.
- (4) An increase in price of at least 2 or 3 cents per pound might be secured by earlier marketing of poultry through culling at the proper time.
- (5) Income from the earlier marketing would amount to \$2,000 a year.
- (6) Proper culling of poultry by all poultrymen and farmers would add to the county's income at least \$8,000 a year. - R. H. Lovejoy, County Agent, South Paris, Oxford County.

Michigan

Poultry demonstrations were established at 12 places in the county; breeding, selection, feeding, care, and housing were given attention. George P. Hildner reports a net profit of \$1.83 per hen above all costs for 1921 and 1922; another poultryman reports an average production of over 160 eggs per hen. E. Lewis reports better egg production and a more uniform type of Rhode Island Reds as a result of selection and breeding. He has discontinued dairying and replaced the

cows with hens because of the greater profit in poultry. These farms are becoming well known throughout the county as a result of the publicity work being done, and they report a large increase in sales of hatching eggs and day-old chicks. The poultry business of the county is gradually adopting improved methods. New poultry houses are being erected after approved plans and others remodeled to come up to specifications necessary for winter egg production. Colony brooders are becoming common, more care and attention being given to hatching chicks at the right time of year for winter egg production. - Charles E. Atwater, County Agent, Traverse City, Gladwin County.

Missouri

Poultry work has been a joint project with Miss Jane Hinote, home demonstration agent, and we have planned it along four distinct lines: housing, feeding, breeding, and marketing. Housing has been stressed at all of our seven poultry meetings, which were held from February to November. We have urged the use of modern houses, preferably the Missouri type. We have a record of 25 houses having been completed, of which 15 are the Missouri type, and of 12 houses having been remodeled. These Missouri houses are being built in seven different townships and are looked to as models in every community. Eugene Herndon, of Jefferson Township, constructed a Missouri house, following in detail the plan given in the Missouri bulletin. When he finished, there was hardly enough lumber left to kindle a fire in the kitchen stove. D. E. Powell inspected the house and within 30 days had completed one like it. Our remodeling work has consisted for the most part of arrangement of the interior, installation of dropping boards, and the providing of open-air fronts.

Feeding also has been stressed, with particular emphasis on the dry mash hopper. Surprising as it may seem, a large number of people had a very vague idea as to the proportions and content of a dry mash. Improved feeding methods have been adopted by 271 flock owners, and many have changed their feeding practices. The survey of 5 school districts in one township shows that 51.6 per cent of the flocks were fed a dry mash at the beginning of the year. Our certified breeding project has progressed in a substantial way. Although no new flocks have been added, 5 have continued the work. This involves 4 White Leghorn flocks, 1 Buff Orpington, and 1 Rhode Island Red. There were certified this year 178 White Leghorn cockerels, 30 Buff Orpingtons and 5 Rhode Island Reds. The growing popularity of this work is shown by the fact that Mrs. Millard's 70 Buff Orpington and White Leghorn cockerels were all sold and orders were being turned down by the 11th of November. Certified breeders have kept up their work in the demonstration farm flock contest. The most notable result of the work is in the community of the Millards, where the work has been going on for 5 years. It was in their community that we found 58 per cent of the flocks purebred, 72 per cent of the poultry houses modern, and 51 per cent of the flock owners feeding dry mashes. We have enrolled 33 farm flock cooperators for the year beginning November 1, 1922. Robert S. Clough, County Agent, Warrensburg, Johnson County.

Nebraska

Poultry management is one of the big problems that confront our farmers today. There are some things that we cannot overcome on the farm; there are others that we can overcome, and one of these is the control of hatching time for chicks. In going over the county about the first of November, one will find that hundreds of thousands or probably one-half of the chicks hatched this year are small, stunted, disease-susceptible fowls, which if kept during the year will lose to the owner what the other half makes. The poor development of some of these may be due to lice, mites, worms, and crowded quarters as well as deficiency in needed food elements, but I believe that the largest contributory factor is late hatching. It appears that after May 1 it is too late to hatch chicks. Birds hatched after that date are poorly developed and take the room and feed that rightly belong to the early pullets that are going to be the laying and breeding stock. We have quite a number of farmers who limit their hatches to March or April and always have well-matured and early-laying birds. This is a demonstration of good poultry management.

Twenty-three culling demonstrations were conducted with an attendance of 329, and 3,960 fowls were handled. In each of the demonstrations a thorough job was done. The slackers and diseased birds were taken out; sodium fluoride was used for delousing; and a thorough treatment for scaly leg was applied to each fowl. Extension specialists assisted in this work as well as in two lecture meetings and two days of accredited flock work. Feeding, housing, and production of infertile eggs were always discussed at these meetings. A large number of farmers were assisted in mating breeding pens during the early part of the year. Many of them have had splendid success in raising the standards of their flocks through these special matings. At the poultry show on October 27 and 28, more than 300 high-scoring cockerels were sold at auction the second day, and this was considered one of the best means of getting standard birds at the head of farm flocks. The fowls were all passed on by the judge for both utility and standard breeding. Seven cooperators were secured for accredited flock work next year. They finished this year's work 100 per cent. The required average production of 85 eggs per hen in order to be accredited was met by all but one cooperator. The average net profit per flock of 150 hens for the accredited flock year was \$384.96, and the egg average per hen was 107 for the year. Six new cooperators have been secured for the coming year, making a total of 13. - Jacob F. Parbaugh, County Agent, Tecumseh, Johnson County.

New Mexico

The work on poultry improvement that was started last year was continued this year, as the county agent knew that there was still room for improvement in farm flocks. Two years ago slides on the subject of poultry management were secured from the International Harvester Co. and were shown

in most of the communities of the county. The people turned out well to see the slides, but the results were not such as might have been expected. Therefore, the slides were obtained again last winter and spring and were shown in the county for the second time. The results this year are much more gratifying. During the past spring, at least 40,000 baby chicks were shipped into the county. These were the best that could be located, and some very good flocks have developed. The care of the fowls was one phase of the work that was especially emphasized. Many of the farmers have been in the habit of housing the farm flock in any kind of an old shack, never cleaning it, and yet expecting the flock to pay dividends. Proper feeding of the farm flock was badly neglected. Corn has always been plentiful in the county, and quite naturally farmers have been feeding much of it to the poultry. Directions as to proper rations for farm flocks have been procured and distributed.

As a result of this work, poultry practice has been improved on at least 20 farms; 10 poultry houses have been either made over or built anew, 2 having been built by Spanish-American farmers. They seem to like the sight of a good many cockerels among the hens and think that the more roosters they have the more eggs. It is difficult to dislodge the belief from their minds. During the past year, 12 purebred Rhode Island Red cockerels were exchanged by the county agent for scrub cockerels that the native farmers had in their yards. At least 20 farmers have adopted better methods of ridding their flocks of lice and mites. In many instances, the farm women have not known what was the best treatment and were not located where they could get proper remedies. In such cases the county agent has procured sodium fluoride for them and given instructions for its use. Vaccination was resorted to in an effort to eliminate chicken pox or roup. This was first tried on his own flock by the county agent, and the results were so satisfactory that the remedy was recommended to others. One flock of 35 turkeys was vaccinated; after two weeks the owner sent word that only one turkey had died and that that one was nearly dead when vaccinated. In all, 1,000 chickens have been vaccinated with a death loss of only 5 per cent. Not only has vaccination lessened the mortality, but it has put vigor into the flocks. Whenever it was impossible for the county agent to do this work, he lent his outfit to the farmers so that they could do it themselves. Twentieth-five flocks were culled by the county agent during the year, but many farmers did their own culling as a result of work that was started last year. Some of the farm women are becoming proficient in culling work. - Lorin E. Jones, County Agent, East Las Vegas, San Miguel County.

New York

The poultrymen of Otsego county adopted the "poultry council" plan in 1921. The summarized program as adopted and chartered for 1922-23 meetings is as follows:

- (1) Culling by a paid man.
- (2) Certification of flocks.
- (3) Promotion of trap-nesting station.
- (4) Poultry survey.
- (5) Demonstrations on egg grading.
- (6) Demonstrations on sanitation and diseases.

The aim of the council is to increase profits through better-bred fowls, better marketing methods, and more efficient flock practices. Culling demonstrations have been discontinued, because the work has been carried on for so many years that poultrymen now either should know how to cull their flocks themselves or should employ some one to do it for them. Two members of the poultry marketing committee appointed in 1921, namely, the county agent and Charles L. Stanton, spent a week in Rockingham County, Va., studying the poultry business. The former's expenses were paid by the farm bureau and those of the latter by the Southern New York Railway Co.

In Rockingham County, we found that everyone kept hens as cows are kept in Otsego, yet we were informed by the local county agent that he knew of no flock in the county having more than 750 hens. Practically no one hatched his own chickens; the work of all was done at commercial hatcheries, 8 of which we visited. The largest hatchery had a capacity of 60,000 eggs, and we were informed that this would be increased during the year to 200,000. The reason for not hatching their own chickens, as given us by the producers, was that they did not have the time and did not want to bother with the confining details. Harrisonburg, a city of 6,000, and the only city in the county, has 3 privately owned produce houses for the handling of poultry and eggs. The largest did a business of \$1,750,000 in 1921 and of \$1,500,000 in 1922. On April 17, this concern had already sent 30 carloads of eggs to New York City to be placed in cold storage. We came home confident that something could be done to develop the industry here. As a result of the Virginia investigation, the Hartwick Hatchery, Inc., was organized and capitalized at \$12,000. A building measuring 34 by 60 feet has been erected, and at this writing there are \$4,400 worth of Buckeye incubators in transit for the company. The building was planned to accommodate six 10,000-egg machines, and three of these are being installed. The president, who is also one of the largest stockholders, has been employed as manager. A local poultryman will operate the machines. The agent attended 4 meetings with a total attendance of 70, at Hartwick to help put this project across. Six thousand three hundred dollars worth of stock has been sold, and the manager has in addition \$2,500 worth which must be sold to care for all expenses. - Floyd S. Barlow, County Agent, Cooperstown, Otsego County.

The poultrymen in the county are fairly well organized, and a poultry association has been active for several years. This association holds meetings once a month. Some of the best plants in New York State are located here; and because of a large Hebrew population and the nearness to the city, poultry raising is the most profitable enterprise in the county. Artificial illumination, modern poultry houses, culling of flocks, certification of

fowls, and the winning of the first prize in the egg-laying contest on Long Island by a pen of fowls from this county, are some of the results of extension work with poultrymen. This fall, progressive poultrymen by putting early moulters under lights have increased their production by from 40 to 45 per cent. Eggs at present bring \$1.10 per dozen. If these birds had been sold when culled, they would have brought about 50 to 60 cents each. Plans have been furnished for the construction of poultry houses and the remodeling of old buildings, with the idea of keeping down overhead costs. There have been many failures in the county due to building expensive houses of hollow tile or brick, but at present only modern houses are being built. - T. C. Murray, County Agent, Spring Valley, Rockland County.

The bureau encouraged and gave publicity to the proper use of lights in poultry houses to increase profits through increased egg production, and the proper use of lights in brooder houses to decrease the number of dead and deformed chicks resulting from crowding where no lights are used. It also encouraged the proper feeding of green cut bone to increase the size of eggs. This adds greatly to the profits, since there is frequently a difference of 25 to 35 cents a dozen between the market prices of large eggs and of medium-sized eggs. The bureau secured Prof. James E. Rice, of Cornell University, to give an illustrated lecture at a well-advertised county-wide poultry meeting. Professor Rice showed screen pictures of his trips to Holland and to the Pacific Coast poultry sections. He brought out the valuable facts that hens under electric lights during the fall and winter must be given a chance to rest and rebuild their vitality for about 60 days before the breeding season, to insure the production of strong chicks; and that to obtain the best results, poultrymen should segregate their pullets according to age before putting them under electric lights. - J. G. Curtis, County Agent, White Plains, Westchester County.

Ohio

Perhaps the best example of projects for poultry improvement would be a brief statement of the poultry program in some county. For example, Williams County's poultry program was centered on the following: (1) Economical chick rearing, (2) summer feeding demonstrations, (3) the maintenance of successful demonstration farm flocks, and (4) the certification of breeding flocks.

(1) Economical chick rearing.-- The demonstration farm flock owners were called to meet the poultry specialist in a county group early in March. This meeting was for the purpose of giving instruction to owners in the methods of economical chick rearing, in order that they might lead the discussion of the subject at farm bureau meetings in their own townships. Each of these demonstration flock owners discussed this subject in his respective township farm bureau meeting before about 300 people. Three special brooder-house meetings were held in one township with 49 people in attendance, as a result of interest growing out of these discussions at the local township meetings.

(2) Summer feeding demonstrations. - In order to bring out the value of mash feeding with meat scrap or tankage, especially in summer, 11 townships planned to carry on feeding demonstrations during July and August. Leaders were selected who were to locate farms where no mash was being fed. The flock owners were to be induced to feed a good mash, including either meat scrap or tankage, for at least 3 weeks. Egg records were to be kept during the week previous to feeding the mash and for the 3-week period during which the mash was being fed. Results were to be announced at local township meetings. Three committeemen were successful in carrying out such demonstrations, which caused an increase of from 25 to 100 per cent in egg yields.

(3) Demonstration flocks. - Fifty demonstration flock owners started this work November 1 last year. These flock owners were assembled in November for instructions in keeping their records and again in January for instruction by the poultry specialist in sanitation and disease control. The next meeting was in March on chick rearing; another was in August, and the last meeting of the year was in November. This last meeting was an all-day conference with the poultry specialist in charge. Record books for the new year were explained, and winter management of laying and breeding pens was discussed.

(4) Certification. - The certification of breeding flocks was continued, and five flocks which were certified a year ago were again certified.

Poultry work has been carried on in this county for four years. Summaries by poultry leaders show the following results:

- (1) One thousand two hundred and eighty-eight farms out of 2,800 in the county culled out 109,200 hens this year.
Counting a saving of 25 cents for each hen discarded reveals a total saving of \$27,300.
- (2) One thousand one hundred and twenty farms are feeding mash and meat scrap or tankage as against 9, four years ago.
- (3) There has been an increase of 40 per cent in egg production during the past 4 years due to more intelligent feeding and care.
- (4) The number of farms now using brooder stoves is 1,680 against 168, four years ago.
- (5) The number of farms feeding milk to chicks is 1,960 against 28, four years ago.
- (6) The number of farms raising chickens according to instructions given out at poultry meetings is 1,400, or 50 per cent.
- (7) Over 100 model Ohio poultry houses have been built.
- (8) Fifty-two farms are using lights on their laying flocks against none, 4 years ago.

This poultry program is an illustration of the fact that the county agent does not merely give advice regarding poultry troubles and similar matters, as those unfamiliar with his work are apt to suppose; he builds up a program of assistance to poultry improvement through the development of trained local leaders, who in turn assist others in the improvement of their poultry

management. Through this method he brings about the education of a large number of people in proper methods of poultry management and thus helps establish throughout the county a highly efficient type of poultry husbandry. - O. M. Johnson, County Agent Leader, Columbus.

Proper care of the flock will bring greater returns. During the past year beginning November 1, 1921, five of our farm poultry flock owners cooperated with us in keeping a complete cost record of the equipment and feed for the flock and the total receipts during the year. Each cooperator followed the suggestions and recommendations of the poultry specialists as to managing and feeding the flock. During the year the specialists met with the flock owners to discuss with them important phases of poultry husbandry in proper seasons. The first meeting was in November on feeding for winter eggs; the second in March on hatching and rearing of chicks; and the third in June on summer management of the flock. The object of these demonstration farms is to demonstrate through the flocks the value of proper care and feeding of the farm flock and to establish high-producing breeding flocks.

Summary of Five Poultry Demonstration Farms.
November 1, 1921, to November 1, 1922.

Flock number	Average number of hens per flock	Total number of eggs per flock	Total cost per flock	Total receipts per flock	Inventory	Net gain for flock
1	225	24411	\$316.54	\$888.13	\$25	\$546.59
2	99	13038	215.56	396.29	35	215.73
3	80	8685	154.23	316.99	91	153.67
4	81	12379	161.49	531.10	146	515.61
5	259	23388	332.95	736.60	4	407.65

Flock number	Average number of eggs per hen	Total cost per hen	Total receipts per hen	Net gain per hen	Cost per dozen eggs
1	130	\$1.51	\$3.93	\$2.42	\$0.15
2	134	1.82	4.00	2.18	.19
3	109	2.05	3.96	1.91	.23
4	149	1.99	6.56	4.57	.16
5	90	1.27	2.84	1.57	.17

We have arranged with 21 flock owners representing 12 of our townships to cooperate with us, beginning November 1, 1922, by using their flocks as demonstration flocks. Summer egg production was greatly increased by proper feeding. Blanks for records, ration formulas, and suggestions were furnished to 20 cooperators, and without a single exception they reported that it paid to feed for summer eggs. - R. W. Munger, County Agent, Sidney, Shelby County.

Pennsylvania

Demonstration farms.-- One of the important features of the poultry work is the poultry management demonstrations. The object of these demonstrations is to promote the development of poultry husbandry in Pennsylvania, particularly in local communities, through practical demonstrations of methods of handling fowls under farm conditions. Three or more farms in a county are selected in different communities and are known as poultry demonstration farms. The owners are usually appointed as local leaders in poultry work. As local leaders they assist in advertising the demonstrations and in encouraging the community to use better methods in handling the farm flock. All meetings and demonstrations are conducted on or in the vicinity of these farms. One hundred and sixty-two farms in 27 counties have been conducted as demonstration farms since November 1, 1920. The work on these farms is to be continued for two years. The following outline indicates the operations which are followed:

1. Cooperator sends in poultry income and expense reports each month.
2. Extension service sends to all cooperators a summary of all farm reports each month, together with a sheet of seasonable suggestions.
3. Meetings and demonstrations conducted first year:
 - (1) Fall meetings.
 - a. Feeding and care of hens.
 - (2) Spring meetings.
 - a. Rearing chicks.
 - (a) Incubation.
 - (b) Brooding.
 - (c) Summer care of chicks.
 - (3) Summer meetings.
 - a. Culling demonstrations.
4. Meetings and demonstrations second year.
 - (1) Fall meetings.
 - a. Selecting breeders' demonstrations.
 - (2) Spring meetings.
 - a. Poultry houses.
 - (3) Summer meetings.
 - a. Culling demonstrations.
 - b. Selection of utility pen for show.

Culling.-- At the culling demonstrations it was observed that about 75 per cent of the flocks inspected had not been fed for egg production, thus handicapping the proper culling of the flock. There was genuine interest shown by those attending. The demonstrations were divided into three parts: Feeding for egg production, methods of determining whether the hen was laying or not, and deciding if she were worth keeping another year. After hearing a short talk and witnessing a demonstration with several fowls, those attending culled the flock, bringing each bird to the demonstrator for final examination. Five hundred and forty-six demonstrations were conducted in 58 counties with a total attendance of 13,576.

At these 546 demonstrations 92,520 birds were examined by the farmers and 16,690 hens were rejected as culls. The 13,576 people attending represented a total of about 1,086,080 fowls. Assuming that the same percentage would be culled from these birds as was culled from those at the demonstrations, a saving in feed cost alone of \$271,000 would be effected. About 18 per cent of the fowls examined as compared with 32 per cent 2 years ago were discarded as culls, thus showing that some of the flocks had been very well culled as a result of previous demonstrations.

Rearing chicks.- The spring meetings dealing with the rearing of chicks are part of a series of meetings held on demonstration farms throughout the State. One hundred and forty-two of these meetings were conducted with a total attendance of 2,652. Incubation, brooding, and the care of young chicks were discussed. Selection of eggs for incubation and marking by toe-punching were demonstrated.

Feeding.- During the fall and early winter months, 179 meetings were conducted with a total attendance of 7,697. Feeding and care of laying hens were discussed. In most cases these meetings were conducted on demonstration farms, and methods used on these farms were shown.

Poultry houses.- Ten poultry house demonstrations were conducted on demonstration farms where modern houses were in use or in the process of construction. The attendance at these demonstrations indicated the general interest in better poultry houses, and a "better house" campaign is being planned.

Selecting breeders.- As a method of encouraging the breeding of better poultry by selecting, leg-banding, and properly mating so as to produce strong chicks that will develop into high-producing hens, 27 demonstrations in selecting breeders were conducted. The results of the demonstrations will be observed in the chicks produced from these flocks this year.

Caponizing.- In response to an increasing interest in caponizing, 32 demonstrations were conducted in 8 counties with a total attendance of 460. In one county, 35 birds were caponized on 3 farms. These capons will run with the general flock to demonstrate what a capon is and to determine whether it is profitable to raise capons.

Junior poultry clubs.- The effort to get junior poultry work started on a substantial basis has been notably successful. Six boys having 645 birds set out to make \$1,000 above feed costs in one year, calling their organization the Thousand Dollar Poultry Club. They finished the year with 321 birds, with pullets coming on to fill the ranks. The boys studied feeding for egg production, marketing, selecting, packing, hatching and rearing chicks, housing, and caponizing. A team of three of their members demonstrated culling during farmers' week at the college and at the county fair. Results were computed on the basis of labor income, and it was found that instead of making \$1,000 these six boys had a combined labor income of \$1,732.75. One boy alone had a labor income of \$803, which is remarkable when one recalls that the average labor income of some entire farms in Pennsylvania is between \$400 and \$500. The work done by these boys has resulted in the formation of an adult poultry breeders' association in their own community for the purpose of improving the quality of the flocks and the market facilities. In addition, the work of this club has attracted state-wide attention and resulted in the formation on a similar plan of five new clubs, which have been quite successful. - H. D. Munroe, Extension Poultryman, Pennsylvania State College, State College.

